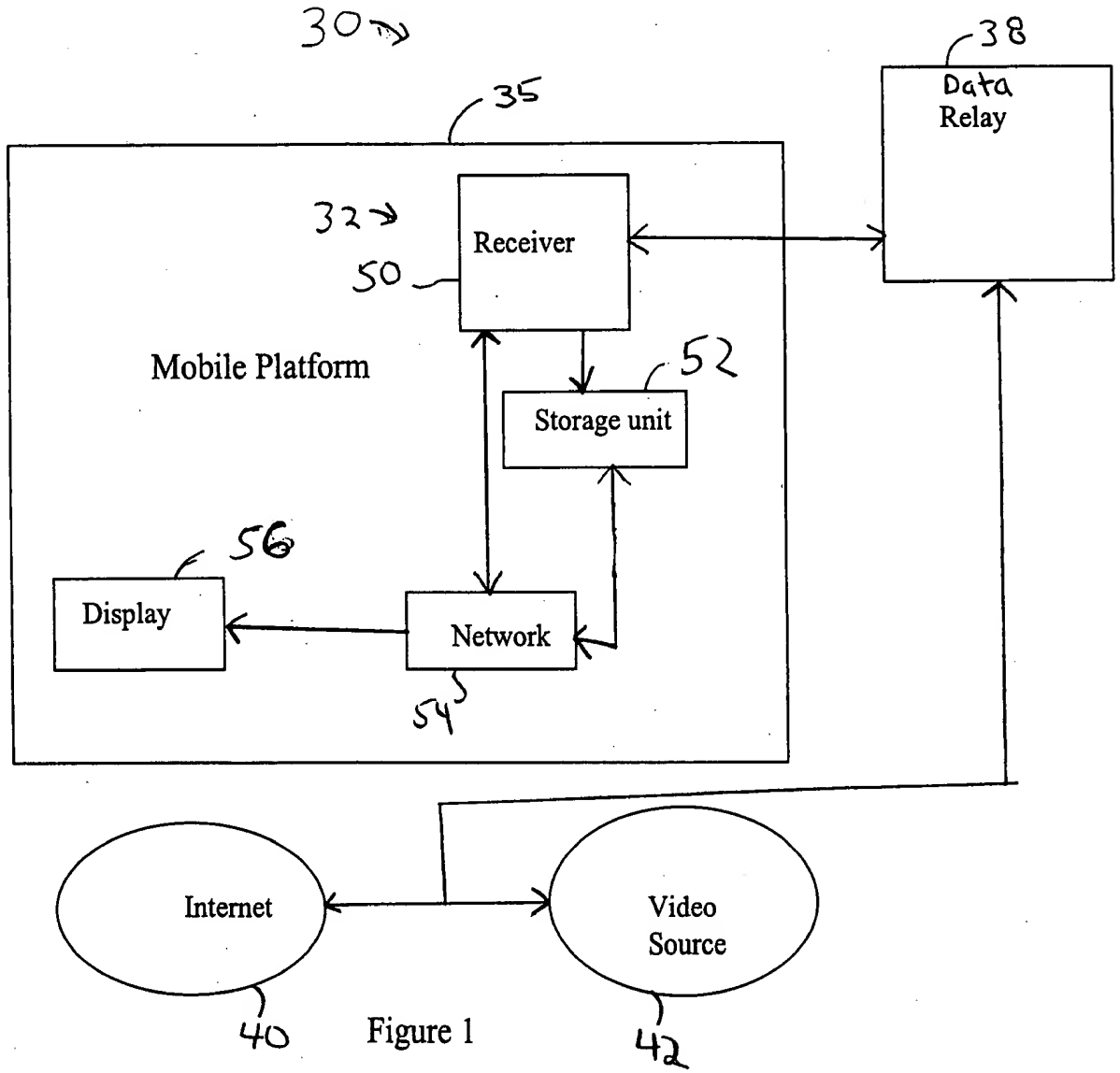
30
38
Data Relay
35
32
Receiver
50
Mobile Platform
52
Storage unit
56
Display
Network
54
Internet
Video Source
40
42

Figure 1

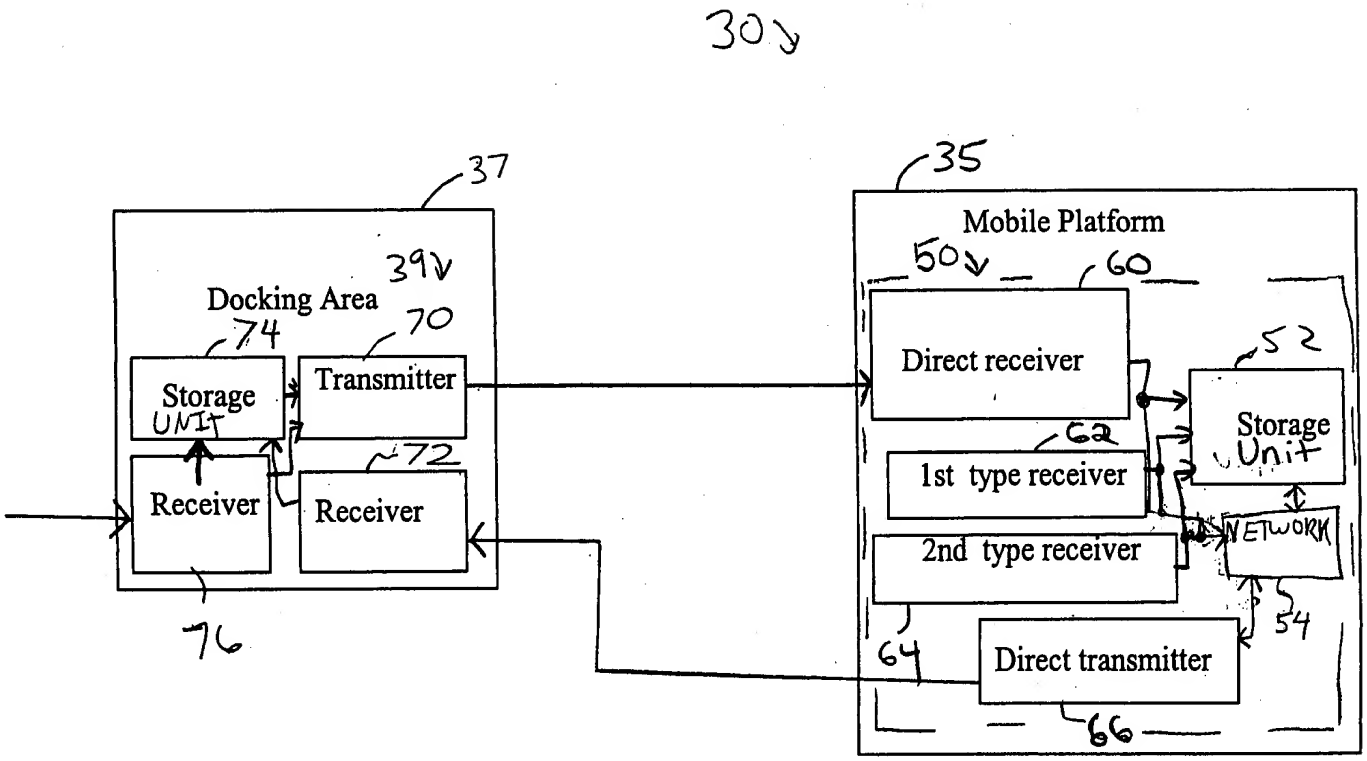

Figure 2

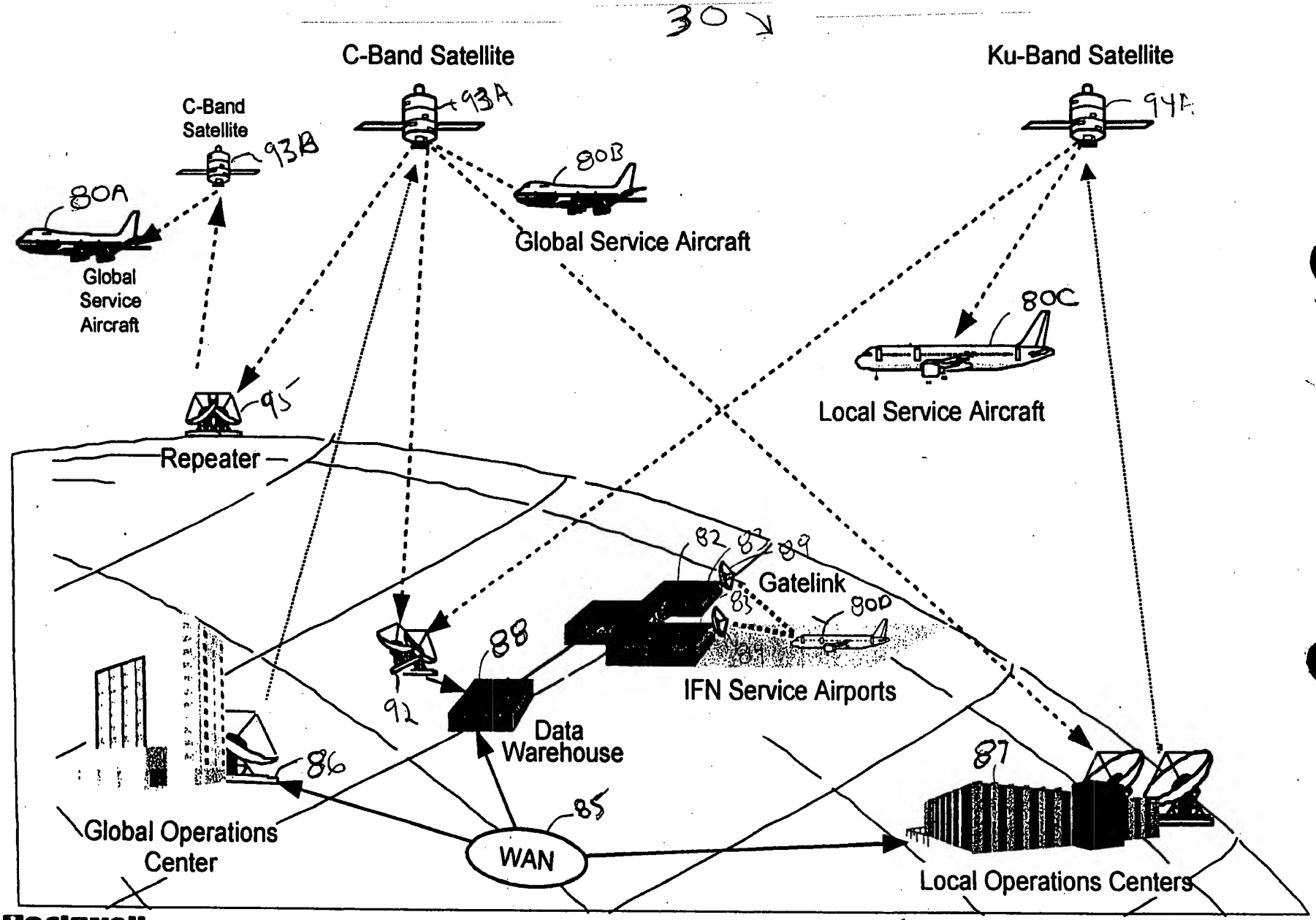
30
C-Band Satellite
93A
Ku-Band Satellite
94A
C-Band Satellite
93B
80A
Global Service Aircraft
80B
Global Service Aircraft
80C
Local Service Aircraft
95
Repeater
82
83
89
Gatelink
85
80D
88
92
IFN Service Airports
Data Warehouse
86
87
85
WAN
Global Operations Center
Local Operations Centers

FIGURE 3

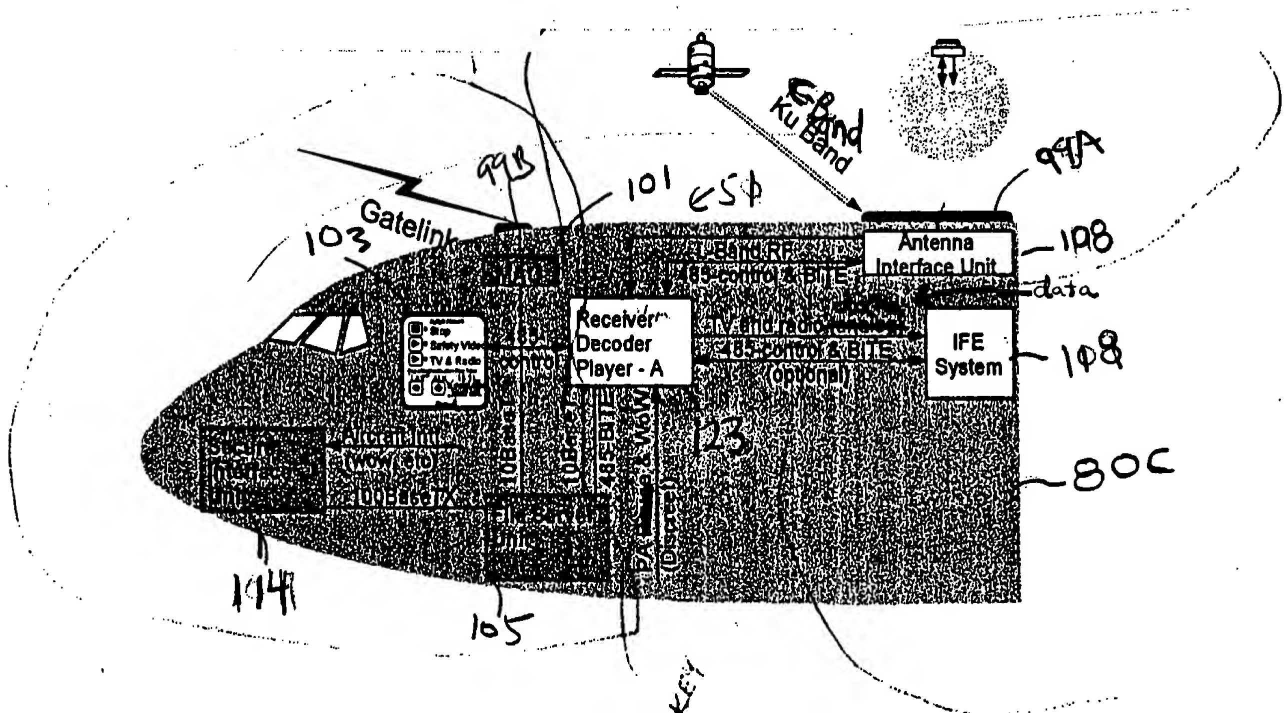
Ku Band
Gatelink
Antenna
Interface Unit
IFE
System
Receiver
Decoder
Player - A
L-Band RF
485 control & BITE
TV and radio
(optional)
data
99A
99B
101
103
105
108
114
123
80C

FIGURE 4

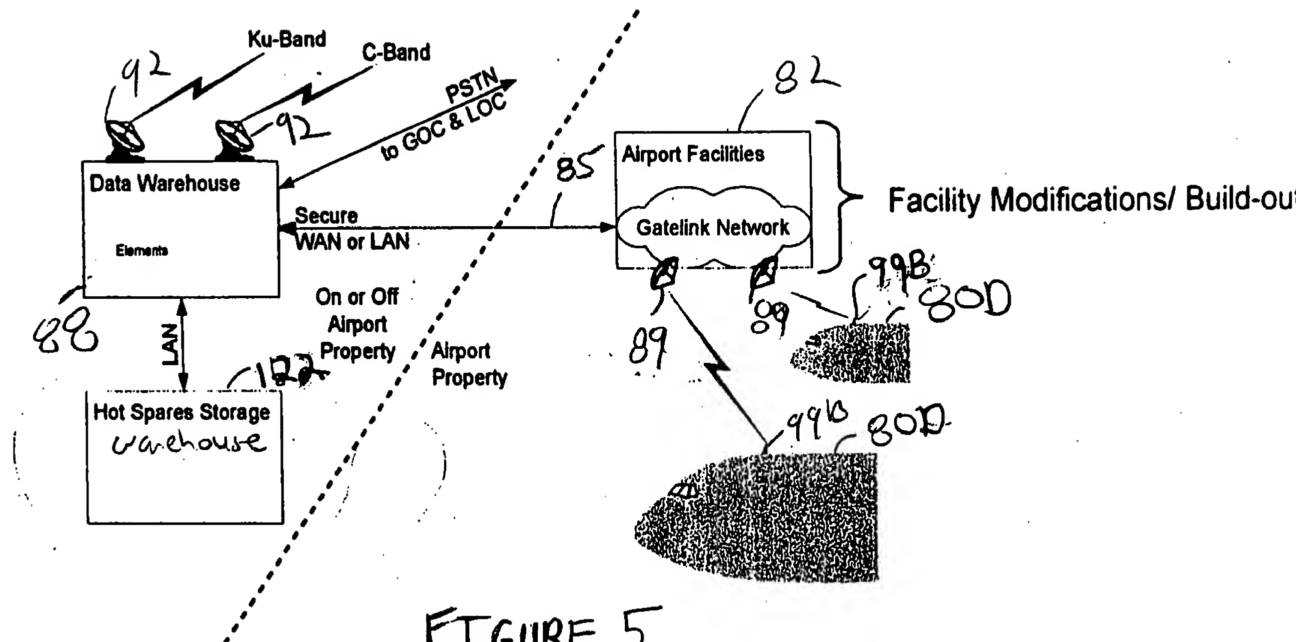
Ku-Band
C-Band
92
92
PSTN
to GOC & LOC
Data Warehouse
Elements
88
Secure
WAN or LAN
LAN
Hot Spares Storage
warehouse
On or Off
Airport
Property
Airport
Property
85
82
Airport Facilities
Gatelink Network
Facility Modifications/ Build-out
89
89
99B
80D
99b
80D

FIGURE 5

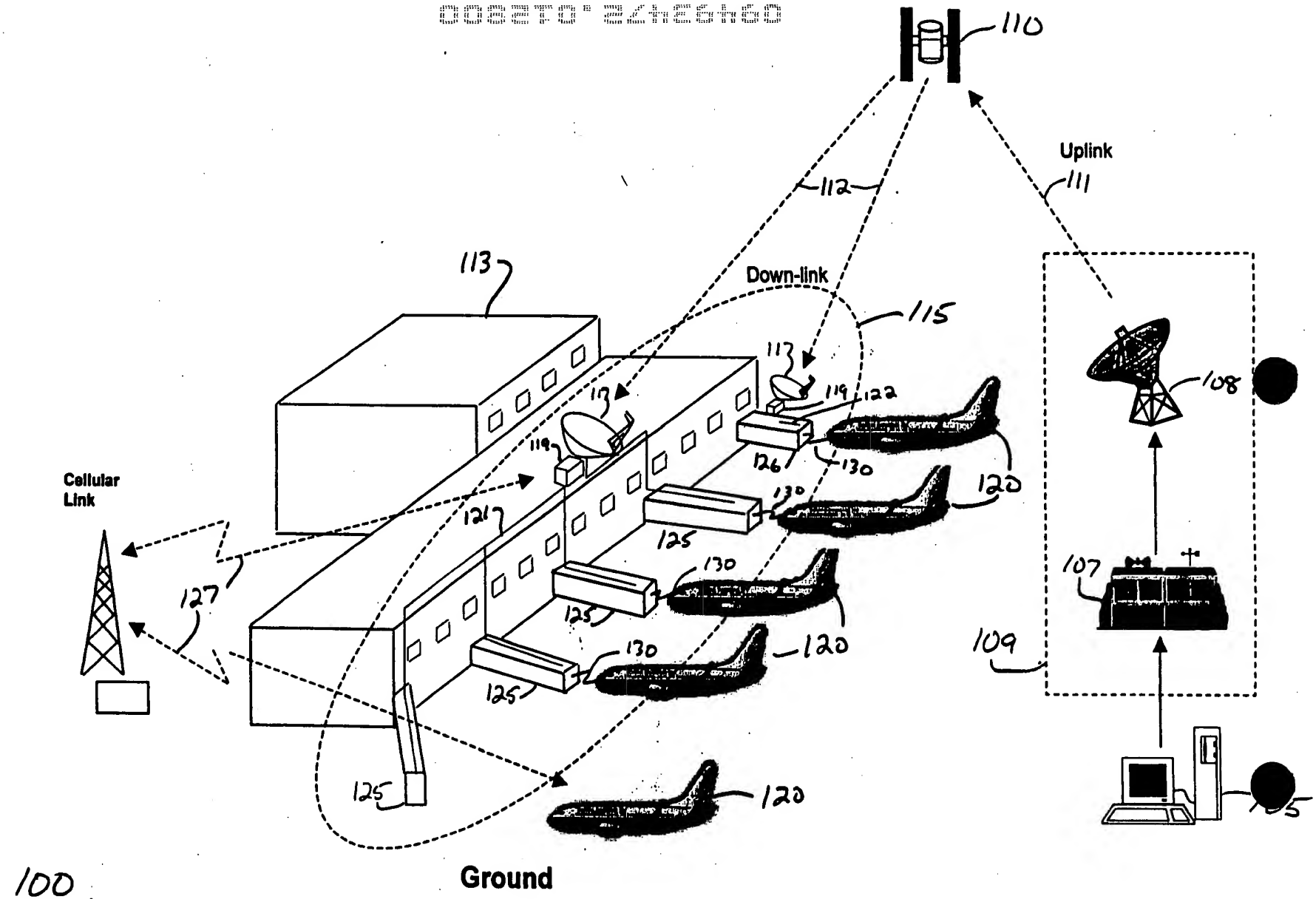
110
Uplink
111
112
113
Down-link
115
117
119
122
126
130
120
125
121
127
Cellular
Link
108
107
109
105
Ground
100

Figure 6

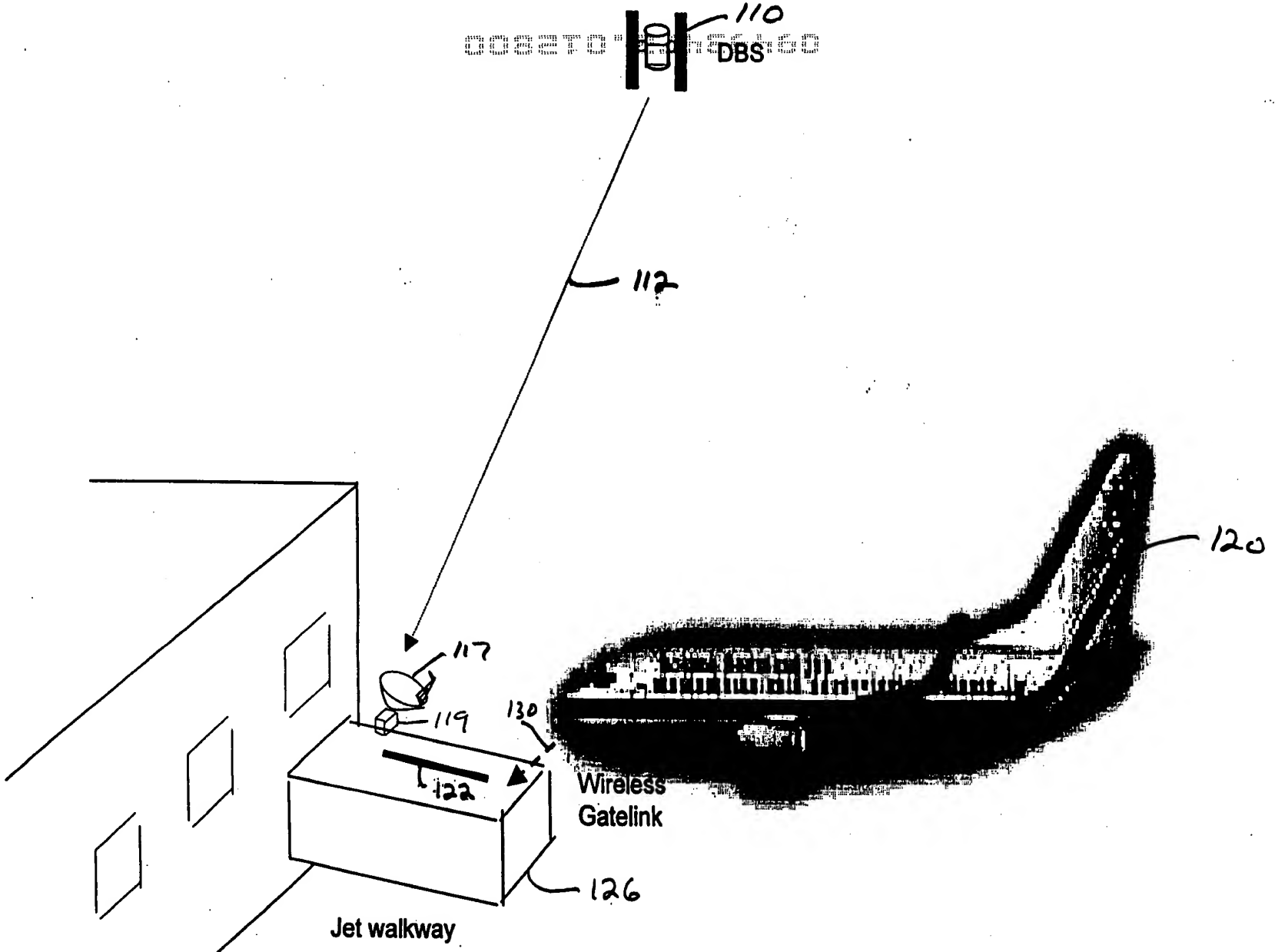
110
DBS
112
120
117
119
130
122
Wireless
Gatelink
126
Jet walkway

Figure 7.

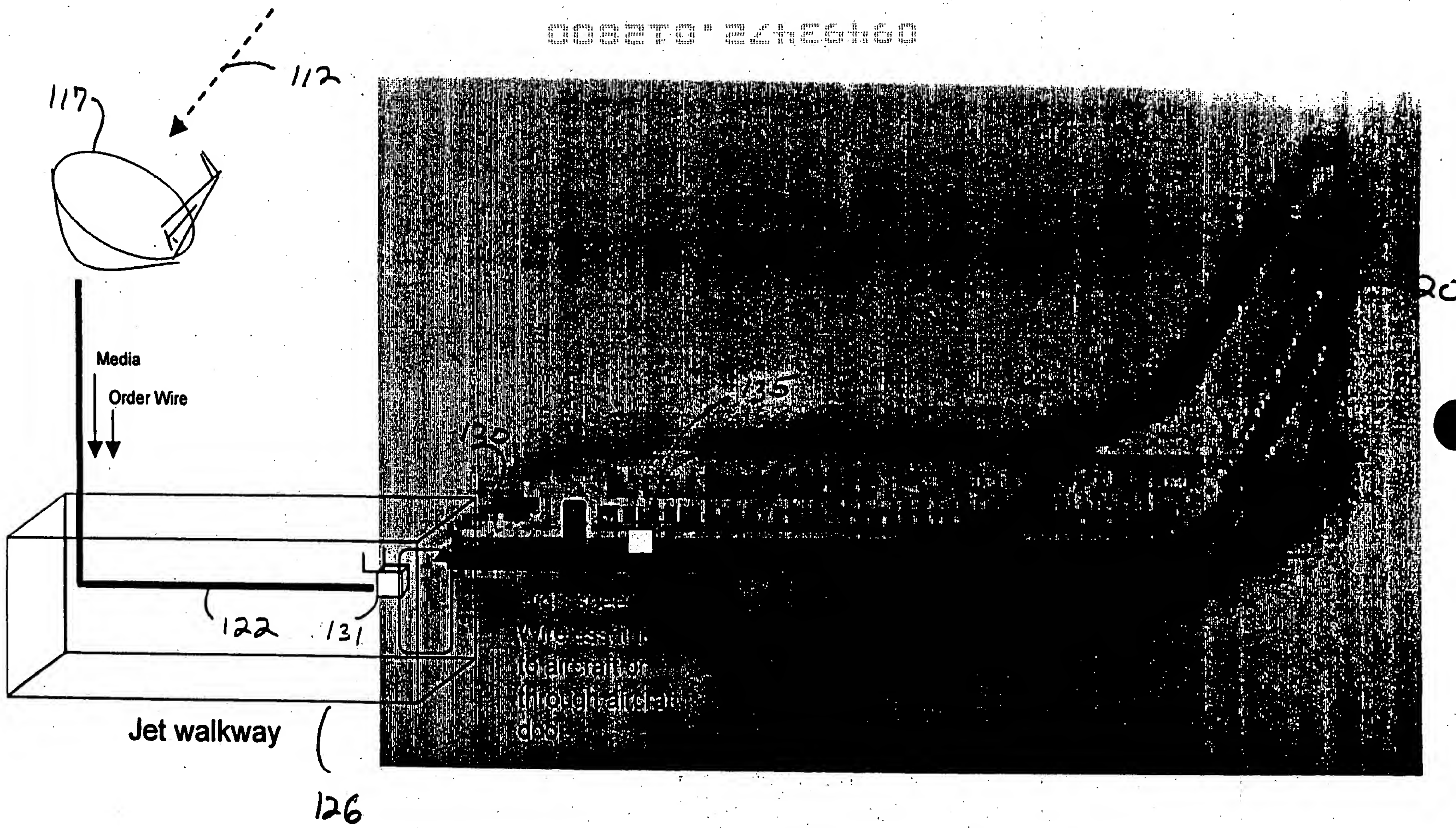

Figure 8

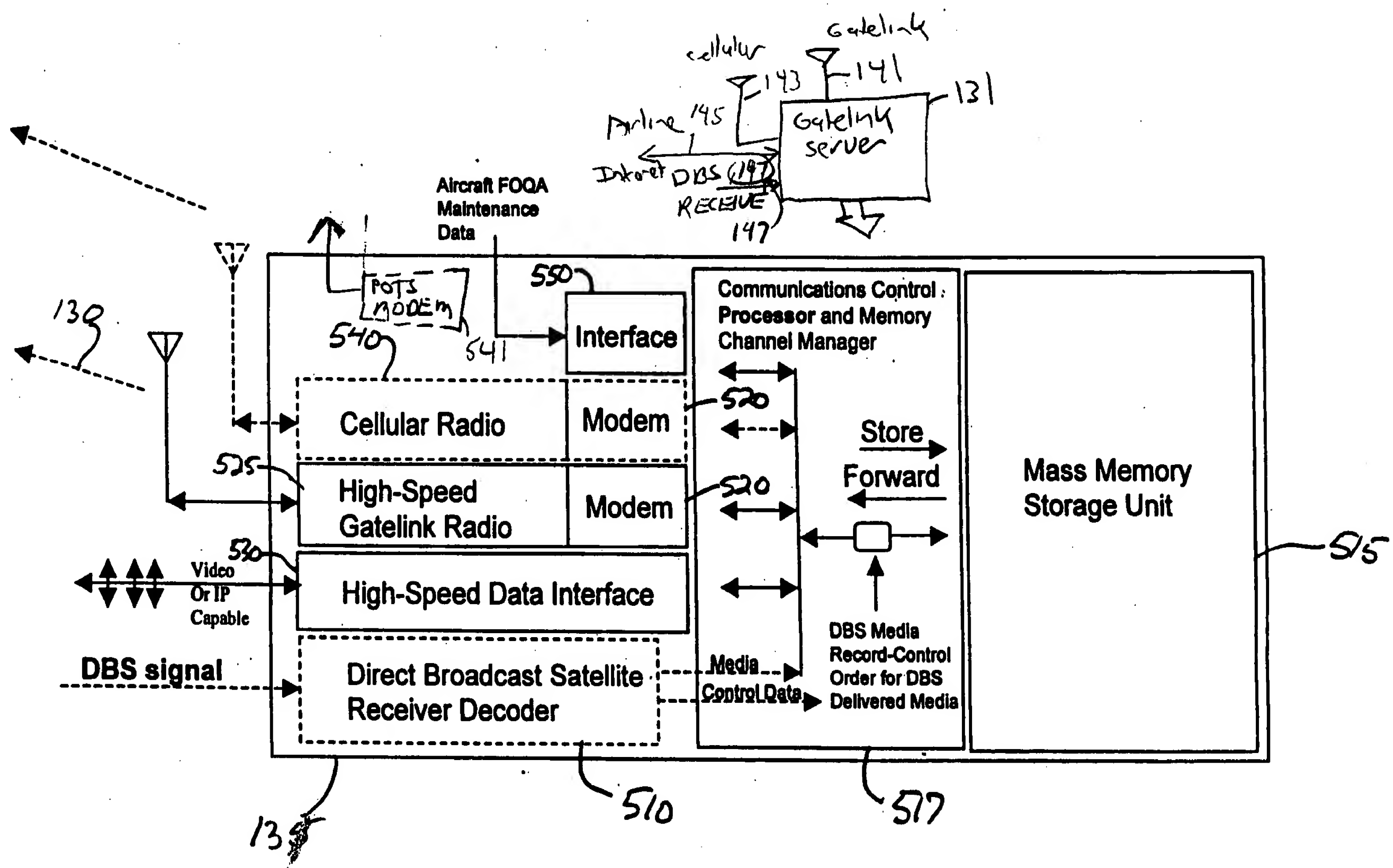
Gatelink
cellular
141
143
131
Airline
145
Gatelink server
Internet
DBS (147)
RECEIVE
147
Aircraft FOQA Maintenance Data
POTS MODEM
540
541
550
Interface
Communications Control Processor and Memory Channel Manager
130
Cellular Radio
Modem
520
525
High-Speed Gatelink Radio
Modem
520
Store
Forward
Mass Memory Storage Unit
530
Video Or IP Capable
High-Speed Data Interface
515
DBS Media Record-Control Order for DBS Delivered Media
DBS signal
Direct Broadcast Satellite Receiver Decoder
Media
Control Data
135
510
517

Figure 9

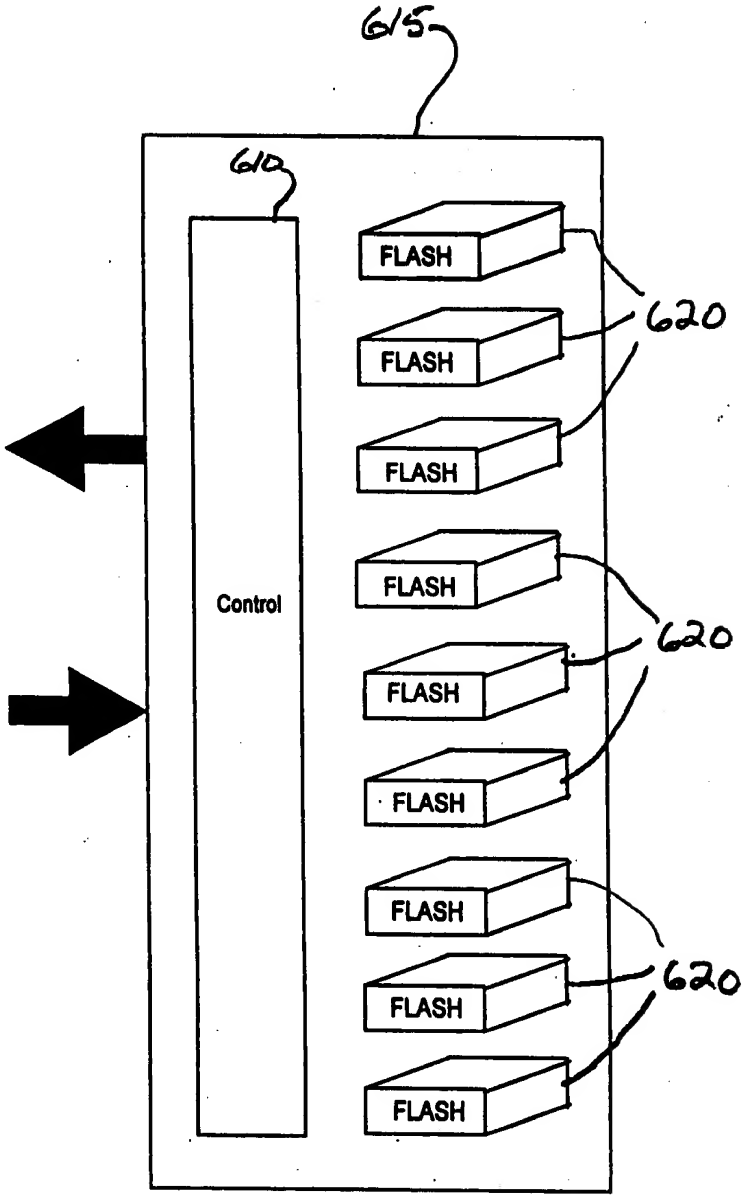
615
610
Control
FLASH
FLASH
FLASH
FLASH
FLASH
FLASH
FLASH
FLASH
620
620
620

Figure 10

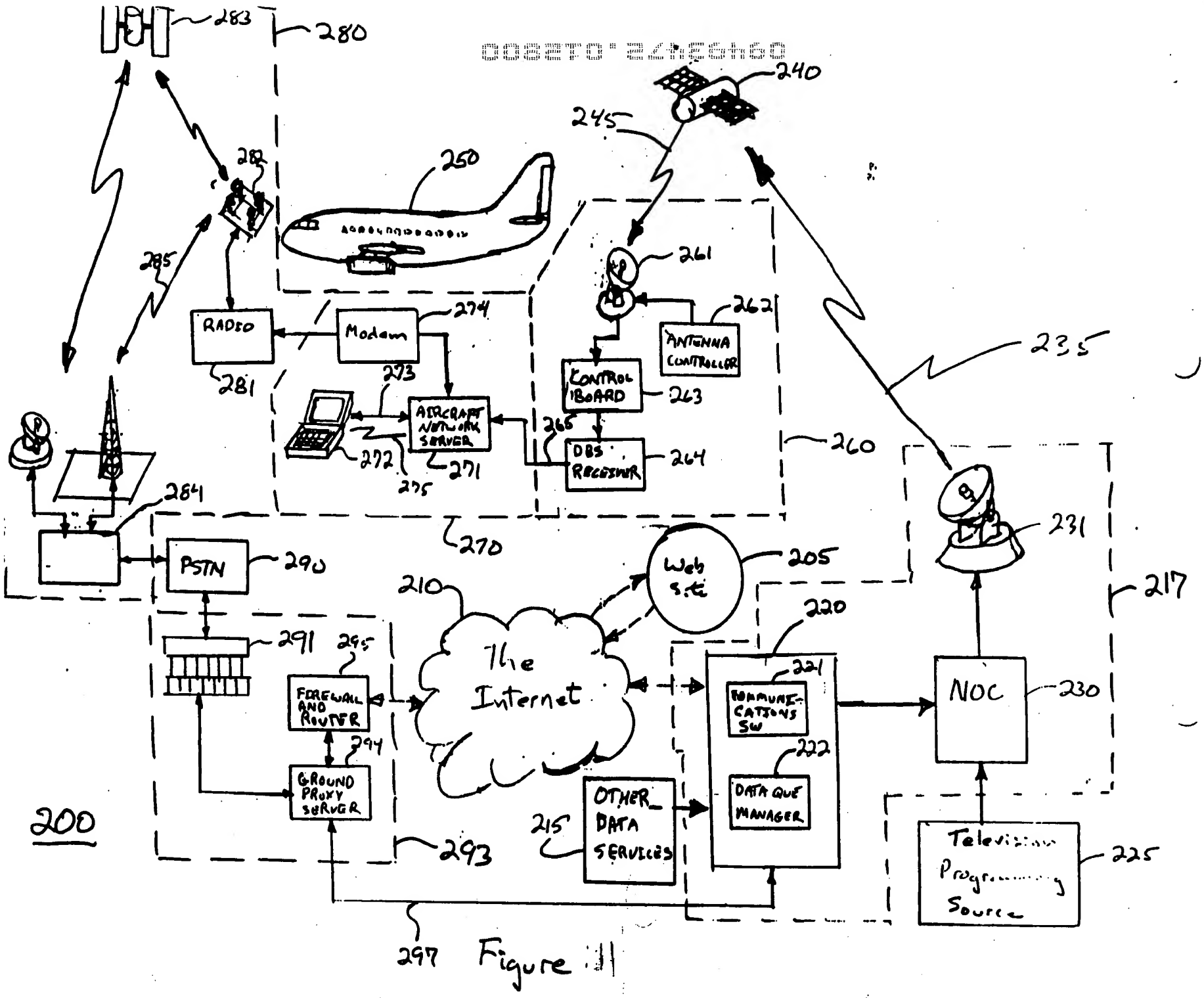
283
280
240
245
250
282
285
261
262
RADIO
Modem
274
ANTENNA CONTROLLER
281
273
CONTROL BOARD
263
AIRCRAFT NETWORK SERVER
266
272
271
275
DBS RECEIVER
264
260
235
284
270
231
PSTN
290
Web Site
205
210
217
220
291
295
The Internet
221
COMMUNICATIONS SW
NOC
230
FIREWALL AND ROUTER
294
GROUND PROXY SERVER
OTHER DATA SERVICES
215
DATA QUE MANAGER
222
Television Programming Source
225
293
200
297

Figure 1

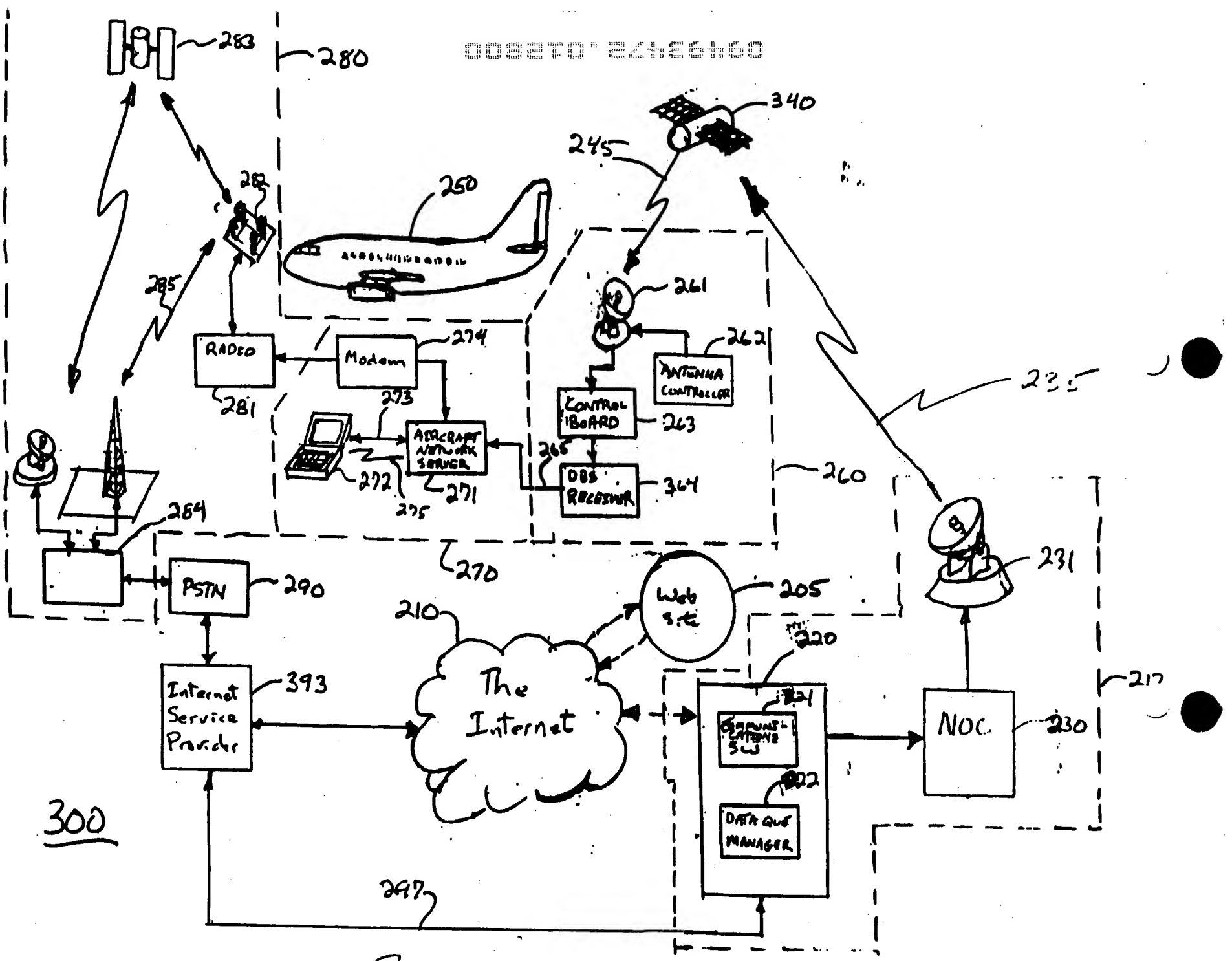
283
280
340
245
250
282
285
261
262
RADIO
Modem
274
ANTENNA CONTROLLER
281
273
CONTROL BOARD
263
AIRCRAFT NETWORK SERVER
272
271
275
265
DBS RECEIVER
264
260
235
284
270
PSTN
290
Web site
205
210
231
220
Internet Service Provider
393
The Internet
221
NOC
230
217
222
DATA QUE MANAGER
297
300

Figure 12

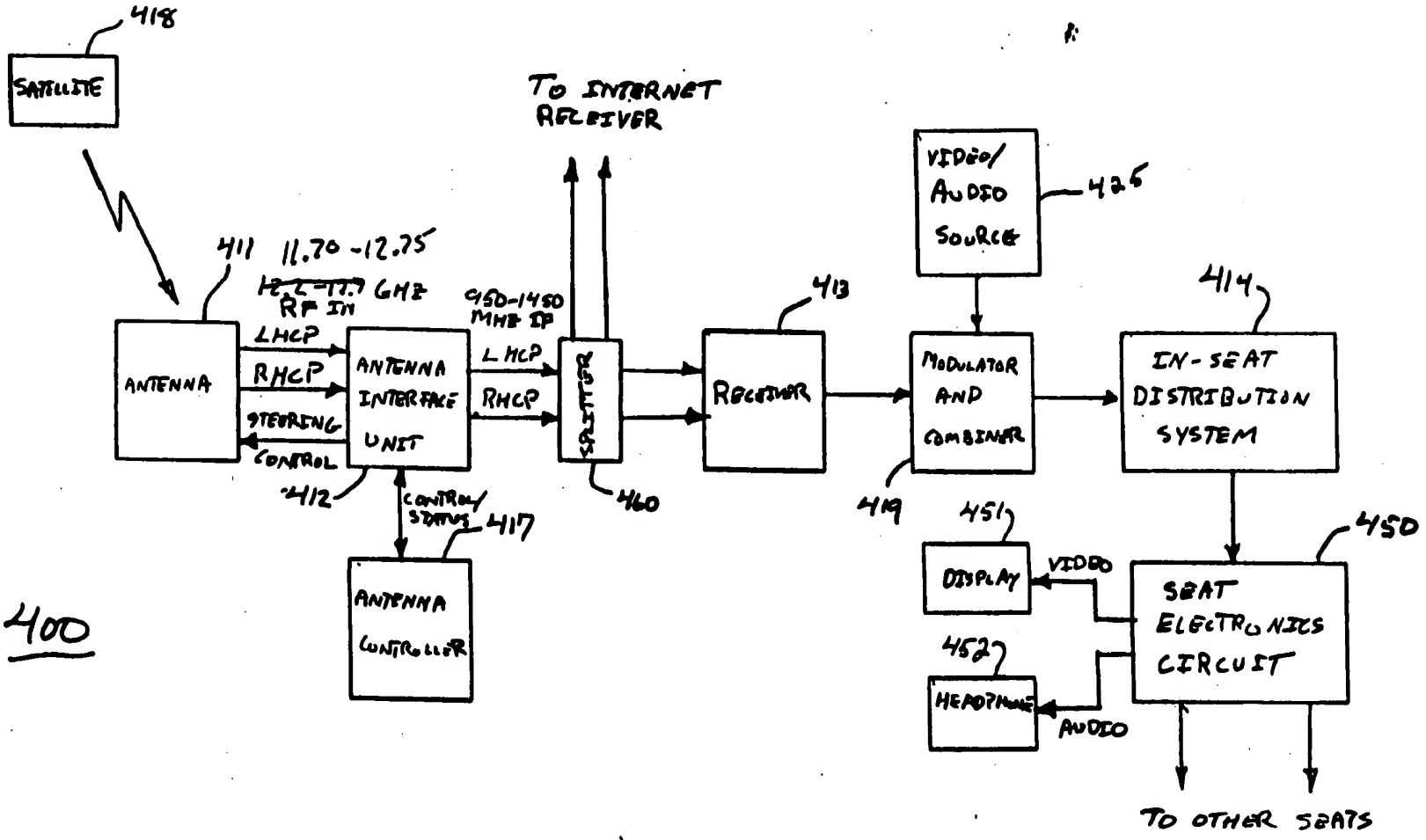
418
SATELLITE
TO INTERNET RECEIVER
VIDEO/ AUDIO SOURCE
426
411
11.70 - 12.75 GHz
RF IN
950-1450 MHz IF
414
413
ANTENNA
LHCP
RHCP
STEERING CONTROL
ANTENNA INTERFACE UNIT
LHCP
RHCP
SPLITTER
RECEIVER
MODULATOR AND COMBINER
IN-SEAT DISTRIBUTION SYSTEM
412
460
419
451
450
CONTROL/ STATUS
417
DISPLAY
VIDEO
SEAT ELECTRONICS CIRCUIT
452
HEADPHONE
AUDIO
ANTENNA CONTROLLER
TO OTHER SEATS
400

Figure 13

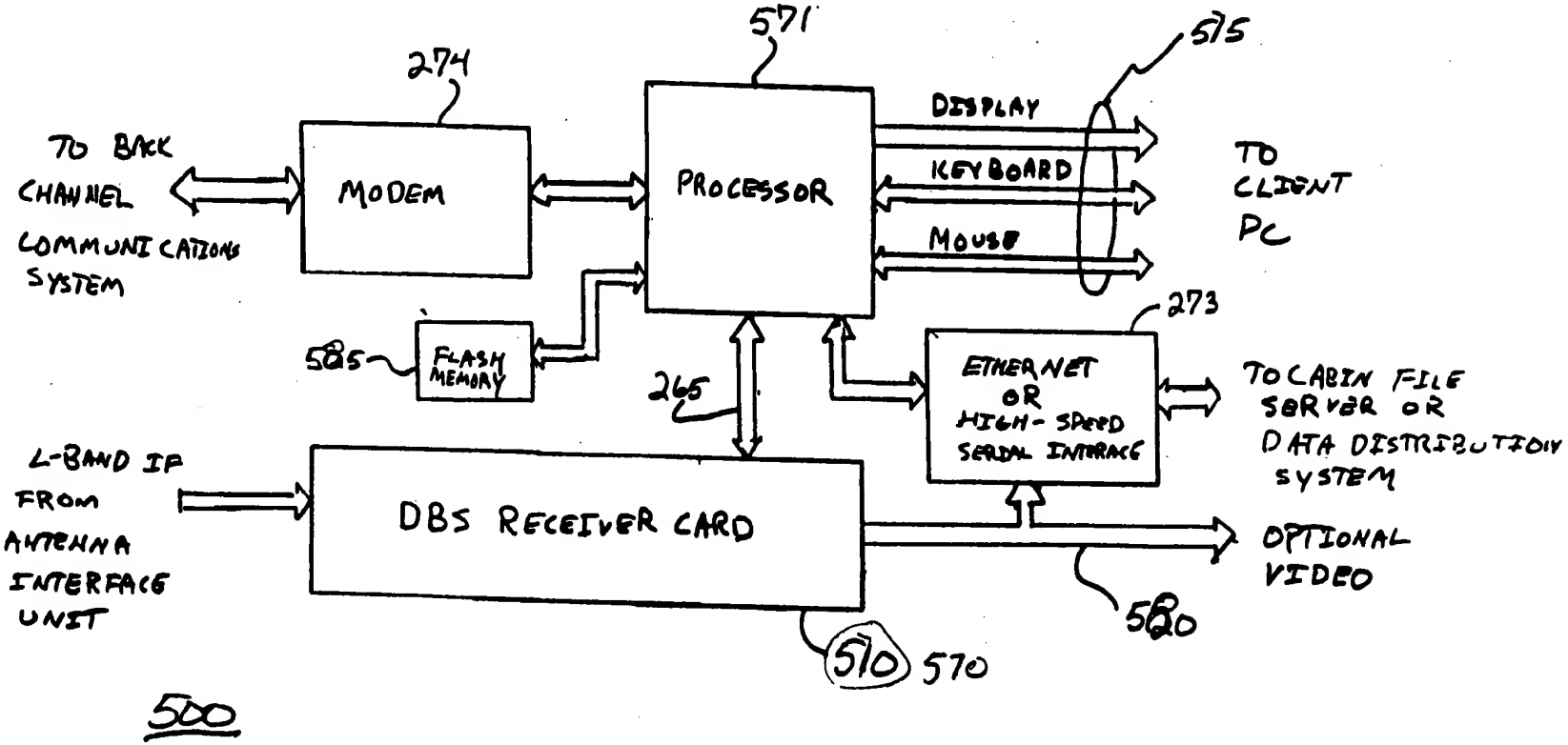
571
575
274
TO BACK CHANNEL COMMUNICATIONS SYSTEM
MODEM
PROCESSOR
DISPLAY
KEYBOARD
MOUSE
TO CLIENT PC
585
FLASH MEMORY
265
273
ETHERNET OR HIGH-SPEED SERIAL INTERFACE
TO CABIN FILE SERVER OR DATA DISTRIBUTION SYSTEM
L-BAND IF FROM ANTENNA INTERFACE UNIT
DBS RECEIVER CARD
OPTIONAL VIDEO
580
510
570
500

Figure 14

"Aviation / Automotive Express"

High Speed DBS Data Channel for ~~Aviation~~ MOBILE PLATFORMS

600

Internet user - 56 k (uses NATS or INMARSAT for back-channel)
Internet user - 28.8 k (uses NATS or INMARSAT for back-channel)
Internet user - 28.8 k (uses NATS or INMARSAT for back-channel)
FTP - 28.8 k
Fax - 28.8 k
Voice mail - 4800
DBS Gatelink Media File Server **Order Wire**

606
User and **Order Wire** channels (priority)

Dynamic allocation of bandwidth between **user** channels and **core** data broadcasting. User channels have priority - this part may fit AgCast's competency. AgCast is also an Internet data content aggregator.

Core broadcasting content "grows and shrinks" according to user channel BW demand. Core programming may be resold to an unlimited audience in the air or on the ground.

Litton Weather WSI Services
DATA BROADCASTING CORPORATION
COMTEX
AgCast

Weather graphics
Airport Conditions
Stock Market
News / Press /
~~HTML~~ Ads and Streaming Media
Client Pay Per View Video (priority)

604
Core data programming broadcast channel (variable)

Rockwell

Business & Regional Systems
- Fax to plane
- Core data
- Full Internet
- "Off-line" Internet
- E-mail / FTP

Air Transport Systems
- Fax to plane
- Large file FTP messaging
- Wireless airport terminal area file server loading / complementing I²S
- Core data to I²S server
  - Stocks, Weather, News

Passenger Systems
- IFN IFE systems

Additional Aviation Related Content Aggregation .... Ad revenue avenue

Fixed contracted (less pre-existing core programming) DBS BW from Echostar and /or AgCast (1-Megabit per second as an example)

ECHOSTAR

Figure 15

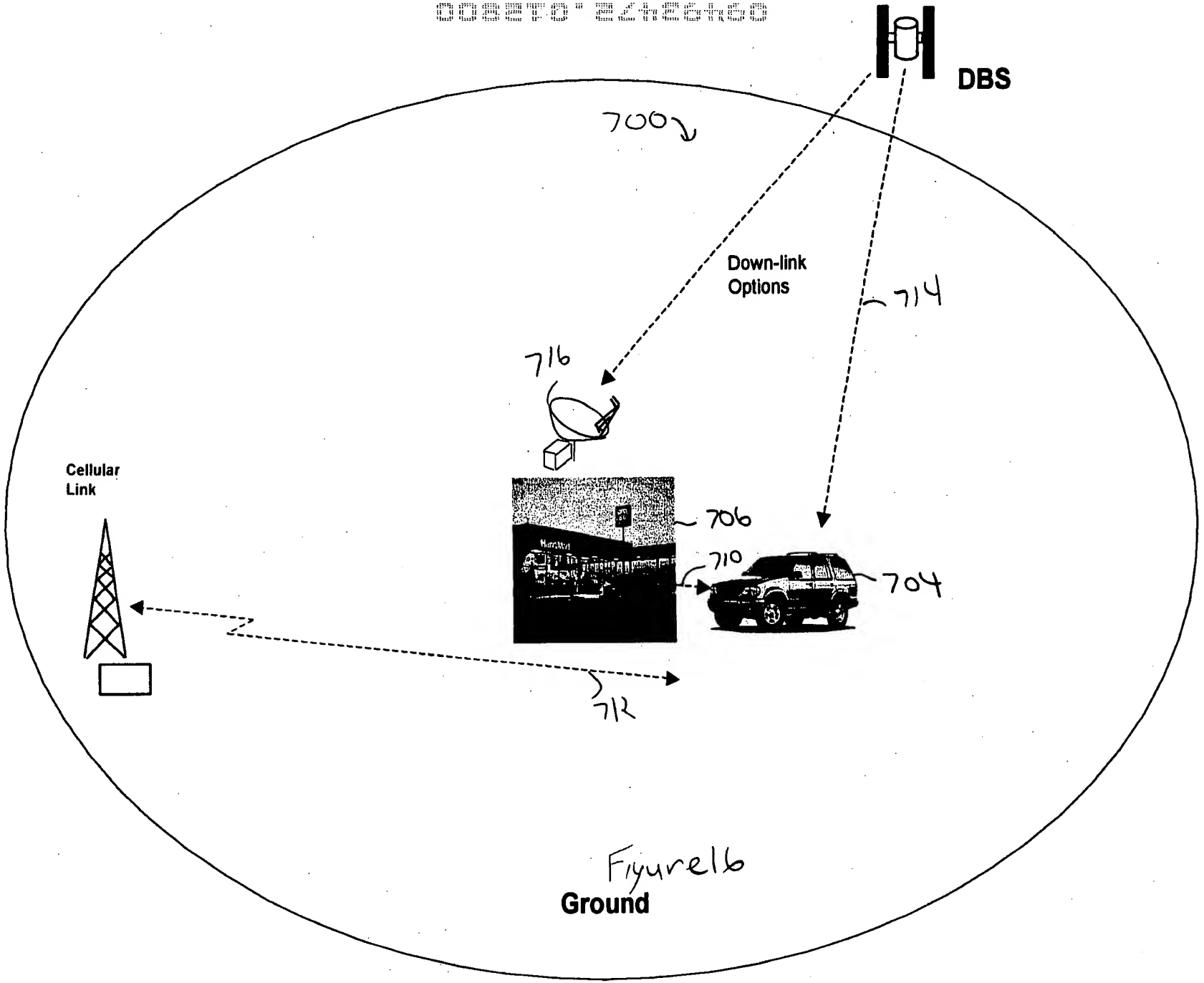

Figure16

This Figure Contains Rockwell Proprietary Information